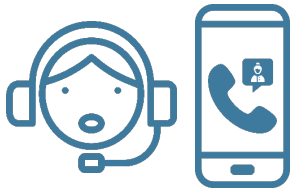




# **BPA's Custom Project Cost Documentation Guide**

November 30, 2023





Audio instructions

# Welcome to BPA's Webex Meeting!

Note: Your audio is muted upon entry.

Audio connection **Preferred choice**

- Use computer audio
- Call me at +1  ✓
- Call in Call me at
- Don't connect to audio

**Note:** The incoming call may be listed as **POTENTIAL SPAM**.

**Second choice:** In the example above, instead select **Call in** and use your phone to call into the webinar. A window will pop-up with your meeting **Call in** information.

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Access code: XXX XXXXXX #  
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Use to mute and unmute

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# BPA's Custom Project Cost Documentation Guide

November 30, 2023



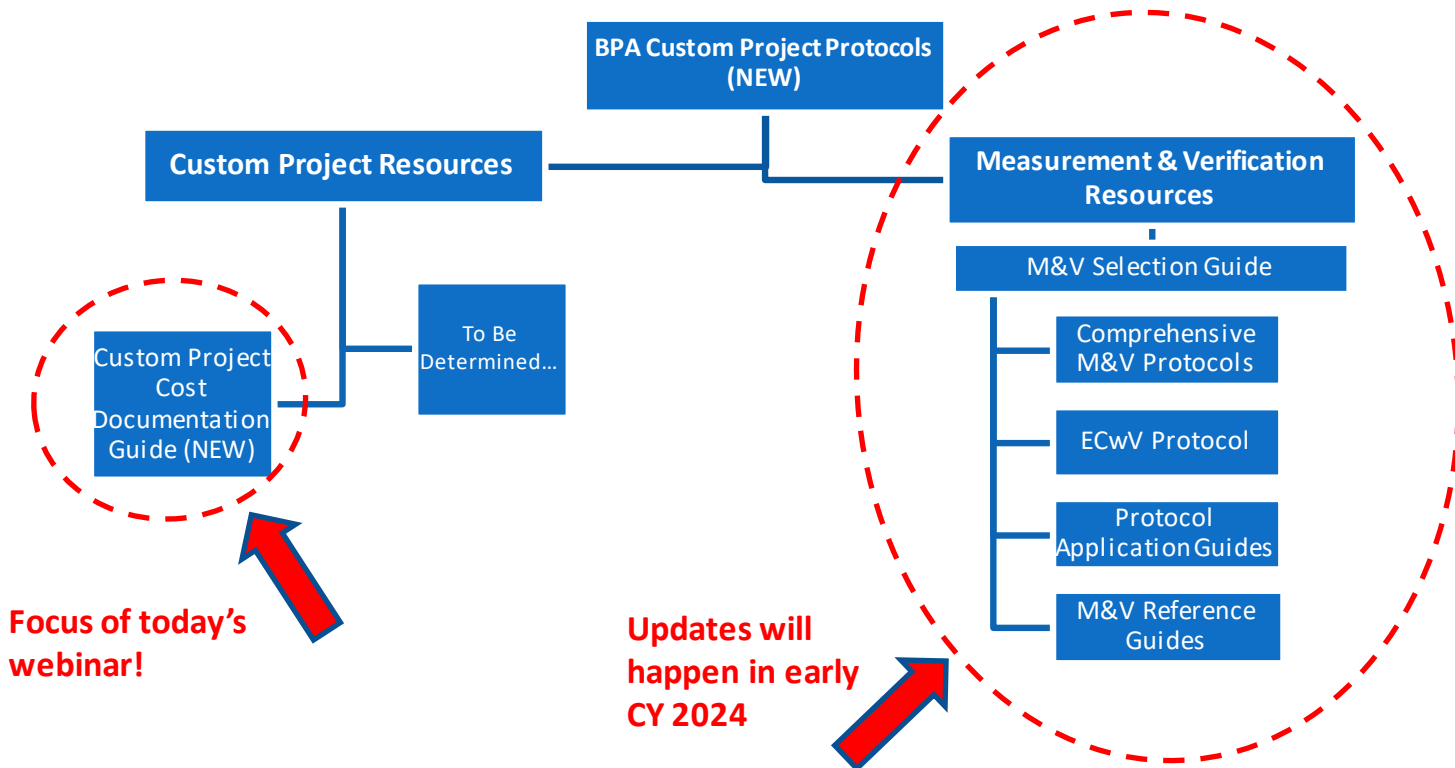


Questions or comments as we go  
Use Chat in Webex  
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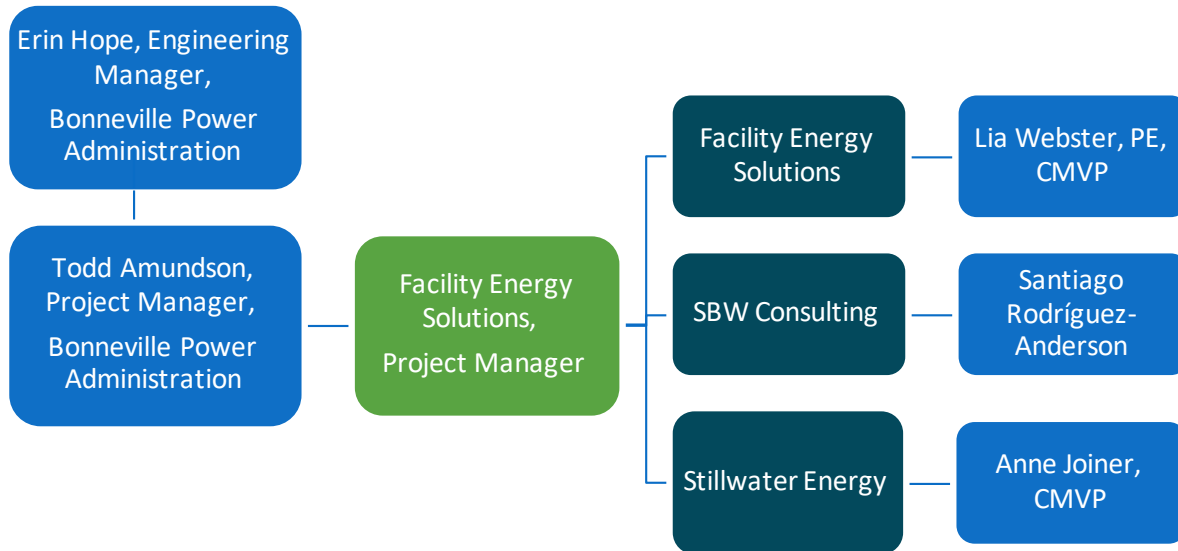


# Project Overview





# Team





# Agenda

## Custom Project Cost Documentation Guide





# BPA's new guide

## *Custom Project Cost Documentation Guide:*

- Defines project costs eligible for incentives
- Details supporting documentation required
- Specifies cost impacts needed for cost effectiveness calcs
- Added to BPA Custom Project Library:

<https://www.bpa.gov/energy-and-services/efficiency/custom-project-protocols>

Bonneville Power Administration

## **Cost Documentation Guidelines for Energy Efficiency Projects**

Version 1.0  
November 2023

**Bonneville**  
POWER ADMINISTRATION



Final review and approval of eligible costs will be determined by BPA.





# BPA's new guide - Purpose

## ***Custom Project Cost Documentation Guide:***

- Provides guidance on eligible costs for energy efficiency projects
- Details supporting documentation on project costs
  - Required to receive incentives
  - Used to determine cost-effectiveness
- Supports the *BPA Implementation Manual*
- Largely aligns with *ESI Cost Guidelines (Rev. 13, 2017)*, Supersedes *ESI Cost Guidelines*

<https://www.bpa.gov/energy-and-services/efficiency/custom-project-protocols>





# BPA's new guide - Overview

Section	Title	Key Elements
1	Introduction	Incentives, Cost effectiveness, BEETs
2	Custom Project Cost Requirements	Custom Project Proposal, Custom Report
3	Project Types	Custom (ER, ROB, NC) UES/Standard Offer, SEM, Other
4	Eligible Project Costs	Total Project Costs, Incremental Project Costs Examples
5	Custom Project Cost Components	New Equipment & Materials, Used Equipment, Contractor and Customer Labor, Misc. Costs
6	Project Implementation Cost Documentation Requirements	Documenting Project Costs, Incremental Costs, and Misc. costs
7	Operations & Maintenance (O&M) Costs	Define eligible changes in O&M Costs, Examples, Documenting cost changes
8	Non-Energy Impacts (NEIs)	Define, Document NEIs, Examples
Appendix A	Cost Documentation Examples	6 examples
Appendix B	End-User Self Certification	End-User Self Certification of accounting system



# Background

Section	Title	Key Elements
1	Introduction	Incentives, Cost effectiveness, BEETs

- ❖ How project cost data is used by BPA
  - Determines incentives
  - Used to evaluate cost effectiveness
  
- ❖ Data gathered through BPA's Energy Efficiency Tracking System (BEETS)



# Types of Projects and Costs

Section	Title	Key Elements
2	Custom Project Cost Requirements	Custom Project Proposal, Custom Report

## ❖ Custom Project Proposal (CPP) cost requirements

- Estimated costs expected
- Sources range from vendor quotes to industry rules of thumb

## ❖ Completion Report (CR) cost requirements

- Invoices required from equipment and contractors
- Details needed on internal customer labor costs
- Overview of baseline documentation for incremental costs



# Types of Projects and Costs

Section	Title	Key Elements
3	Project Types	Custom (ER, ROB, NC) UES/Standard Offer, SEM, Other

## ❖ Custom Project Types

- Retrofit – Early Retirement
- Retrofit – Replace on Burnout
- New Construction/Major Renovation

## ❖ Basis of eligible implementation costs

- Total Project Costs
- Incremental Project Costs



# Types of Projects and Costs

Section	Title	Key Elements
3	Project Types	Custom (ER, ROB, NC) UES/Standard Offer, SEM, Other

## Eligible Measure Project Costs by Project Type

Program Type	Project type	Basis for Implementation Cost
Custom Projects	Retrofit – Early replacement (ER)	Total project cost
	Retrofit – Replace on burnout (ROB)	Incremental project cost
	New Construction/Major Renovation (NC)	
Unit Energy Saving (UES) / Standard Offer	Retrofit	Total measure cost set by program
	New Construction/Major Renovation	Total measure cost set by program
Strategic Energy management (SEM)	Commercial or Industrial SEM	No specific requirements
Specialty programs	Energy Project Manager (EPM), Reconductor Transformer (RT), and Energy Smart Reserve	See program guidelines



# Types of Projects and Costs

Section	Title	Key Elements
3	Project Types	Custom (ER, ROB, NC) UES/Standard Offer, SEM, Other

## Custom Project Types

- ❖ **Retrofit – Early Retirement**
  - Existing equipment was still working, or can be repaired, and had remaining life of at least 1-year
- ❖ **Retrofit – Replace on Burnout**
  - Replacing equipment with less than one year of remaining useful life
- ❖ **New Construction/Major Renovation**
  - Requires new construction
  - Expanded or renovated facilities, or
  - Project is going from non-electric to electrification of load.



# Types of Projects and Costs

Section	Title	Key Elements
4	Eligible Project Costs	Total Project Costs, Incremental Project Costs Examples

## ❖ Total Project Costs

- Design and construction costs, permit fees
- New and used equipment, disposal costs
- Cost of installation labor by contractors or internal staff

## ❖ Incremental Project Costs

- Actual costs compared to hypothetical baseline costs
- Baseline based on code or industry standard practice

**Incremental Costs =**

**Total Implementation Costs – Hypothetical Baseline Costs**





# Types of Projects and Costs

Section	Title	Key Elements
4	Eligible Project Costs	Total Project Costs, Incremental Project Costs Examples

## ❖ Example project using **Total Project Costs**:

- Project includes a new higher efficiency fan with VFD controls
- Early replacement of equipment
- Total project costs are eligible
- Costs include new equipment costs, including the efficient fan, VFD, sensors, and controls, along with their installation cost



# Types of Projects and Costs

Section	Title	Key Elements
4	Eligible Project Costs	Total Project Costs, Incremental Project Costs Examples

- ❖ Example project requiring **Incremental Project Costs**:
  - End-of-life replacement of an air-handling unit
  - New unit adds heat recovery wheel as efficiency measure
  - Incremental costs are required for 'Replace on Burnout':  
Difference in cost to install AHU with heat recovery and the cost to install AHU without heat recovery



# Allowable Cost Components





# Allowable Cost Documentation

Section	Title	Key Elements
5	Custom Project Cost Components	New Equipment & Materials, Used Equipment, Contractor and Customer Labor, Misc. Costs

## ❖ Custom Project Cost Components

- New Equipment and Materials
- Used Equipment
- Contractor and customer labor
- Miscellaneous costs

## ❖ Eligible and Ineligible cost & documentation sources for each



# Allowable Costs & Documentation

New Equipment and Materials	Eligible	Ineligible
Invoices for the new equipment from a vendor	✓	
Estimate for new equipment from a vendor	✓	
Invoices from a vendor for installation	✓	
Estimates for the baseline equipment (vendor quote, RS Means)	✓	
Estimates for the baseline installation (vendor quote, RS Means)	✓	
Invoices for additional non-EE equipment		x
Invoices for work done unrelated to the measure installation		x
Invoices for work done related to previous EE projects		x



# Allowable Costs & Documentation

Used Equipment	Eligible	Ineligible
Cost to refurbish equipment to meet energy efficiency savings	✓	
Retrofit kits	✓	
Shipping and associated costs	✓	
Repurchase of consumed parts	✓	
Cost to install used equipment, whether newly purchased or previously owned by facility	✓	
Parts unable to meet measure life requirements (e.g., 10 years for industrial custom projects)		X
“As new” costs for original equipment or part(s) that are facility owned and are being re-used		X



# Allowable Costs & Documentation

Contractor and Customer Labor	Eligible	Ineligible
Internal or outsourced EE study and project scoping funded by the facility	✓	
Internal or external engineering, design, and permitting	✓	
Internal or external labor for measure installation	✓	
Commissioning installed measure	✓	
Measurement and Verification activities funded by the facility	✓	
Internal labor specific to implementing BPA energy efficiency measure(s)	✓	
Any external or internal engineering and design hours	✓	
Commissioning (if not paid directly by the program)	✓	
Program-funded commissioning		X
Program funded feasibility study (for custom retrofit)		X
Efforts that are part of another program (i.e., SEM)		X
Labor not directly part of implementing the EE measures		X
Activities related to the implementation of a different EE measure		X
Energy Project Manager (EPM) program costs		X



# Allowable Costs & Documentation

Miscellaneous Costs	Eligible	Ineligible
Permit fees	✓	
Rental equipment / Leased equipment related to EEM	✓	
Shipping/freight expenses	✓	
Sales tax, where paid	✓	
Metering equipment as warranted and used during the M&V phase	✓	
Equipment enclosures	✓	
Demolition/disposal expenses	✓	
Salvage value (cost savings)	✓	
“Stand-by parts” (See Other Equipment Situations)	✓	
Replenishing parts from Onsite stores (See Other Equipment Situations)	✓	
Maintenance contracts or additional equipment warranties		X
Any costs that would have been incurred regardless of an energy efficient measure		X
Any non-energy related additions to the project scope		X
Duplicate common parts generally used in maintenance		X
Duplicate parts purchased in order to receive discounts or for convenience to be placed in inventory.		X
Part(s) or sub-system is for additional features not necessary for energy savings		X





# Required Cost Documentation





# Required Cost Documentation

Section	Title	Key Elements
6	Project Implementation Cost Documentation Requirements	Documenting Project Costs, Incremental Costs, and Misc. costs

## Documentation required with CPP and CR:

1. Project Cost Summary:
  - ✓ Project type
  - ✓ Cost basis
  - ✓ Baseline description, if needed
  - ✓ Summary table
2. Documentation supporting costs:
  - ✓ Invoices
  - ✓ Annotated detail on costs, where needed



# Required Cost Documentation

Section	Title	Key Elements
6	Project Implementation Cost Documentation Requirements	Documenting Project Costs, Incremental Costs, and Misc. costs

**Table 6: Example Cost Summary Table for Early Replacement (ER) Retrofit**

Cost Item	Eligible Project Cost	Description (e.g., invoice number, vendor, notes, etc.)	Documentation Type
Heat-pump (HP) Water Heater	\$9,850.00	For a new HP supplied by a vendor	ACMO Invoice #1200
Misc. hardware	\$325.50	Some miscellaneous fittings, parts, and piping	ACMO Invoice #1200
Wiring	\$50.00	Onsite stores provided new electrical wires which will later be replenished	Accounting software summary
Installation Labor - Contractor	\$2,275.50	For installation of HP and repair of damaged piping	ACMO Invoice #1200
Installation Labor - Internal	\$875.00	For installation of HP and repair of damaged piping	Summary of timesheets, employee pay rates
Disposal	\$225.00	Cost to dispose of old water heater and other waste	ACMO Invoice #1173
<b>Total</b>	<b>\$13,601.00</b>		



# Cost- Effectiveness Components





# Cost-Effectiveness Components

Section	Title	Key Elements
7	Operations & Maintenance (O&M) Costs	Define eligible changes in O&M Costs, Examples, Documenting cost changes

- ❖ Changes in O&M costs
  - Time or expertise required
  - Change in maintenance components
- ❖ Change in average annual costs
- ❖ Used in TRC calculation

Example:

- Pneumatic controls replaced by DDC
- Reduced repair time on pneumatic lines
- Cost reduction in customer O&M labor



# Cost-Effectiveness Components

Section	Title	Key Elements
8	Non-Energy Impacts (NEIs)	Define, Document NEIs, Examples

- ❖ Other cost impacts from implementing project
  - Change in water or natural gas consumption
  - Change in non-utility metered fuels (propane, coal)
  - Other benefits such as carbon emissions credits acquired
  - Productivity changes such as increased units/shift
- ❖ Also called non-energy benefits (NEBs)

Example:

- New cooling tower provides water-side economizer
- Cost for make-up water lost through evaporation is an NEI cost



# Examples





# Examples

Section	Title	Key Elements
Appendix A	Cost Documentation Examples	6 examples

- ❖ Examples of cost documentation:
  - Summary of project costs
  - Breakout of ECM Costs from a Large Project
  - Incremental cost determinations for CPP & CR
  - Baseline costs adjusted in CPP
  - Internal labor and materials costs
  - Final invoice





# Example

## Incremental Cost Example 1:

- ❖ Plant upgrade includes installing VFDs on the motors instead of traditional starters
- ❖ As a Major Renovation project, incremental project costs are needed
- ❖ For the CPP, cost estimates from Grainger for baseline and for VFDs were used:

### Initial Estimate of Incremental Costs in Custom Project Proposal (CPP)

Estimated Eligible Project Cost Summary						
Unit Costs				Totals		Incremental Cost
HP	#	Starter Cost/Unit	VFD Cost/Unit	Starters	VFDs	VFD - Starter
6-10	2	\$ 633.60	\$ 2,141.92	\$ 1,267.20	\$ 4,283.84	\$ 3,016.64
11-15						
16-20	1	\$ 1,245.20	\$ 3,293.84	\$ 1,245.20	\$ 3,293.84	\$ 2,048.64
21-30	4	\$ 1,245.20	\$ 4,006.64	\$ 4,980.80	\$ 16,026.56	\$ 11,045.76
	7			\$ 7,493.20	\$ 23,604.24	\$ 16,111.04

# Example

## Incremental Cost Example 1, cont.:

- ❖ For the Completion Report (CR), the actual VFD costs are from contractor invoices
- ❖ Baseline cost estimates from Custom Project Proposal (CPP) are used:

### Final Estimate of Incremental Costs for Completion Report (CR)

Final Project Cost Summary					
HP	Count	Per VFD	Total Cost	Documentation Included	Incremental Cost
7.5	2	\$ 1,234.06	\$ 2,468.12	See Invoice # 1920	Total cost - Baseline Cost (\$7,493.20)
20	1	\$ 1,950.20	\$ 1,950.20	See Invoice # 1920	
25	4	\$ 2,171.40	\$ 8,685.60	See Invoice # 1920	
			<b>\$ 13,103.92</b>		<b>\$ 5,610.72</b>



# Example

## Incremental Cost Example 1, cont.:

### Initial Estimate of Incremental Costs in Custom Project Proposal (CPP)

Estimated Eligible Project Cost Summary						
Unit Costs				Totals		Incremental Cost
HP	#	Starter Cost/Unit	VFD Cost/Unit	Starters	VFDs	VFD - Starter
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21-30	4	\$ 1,245.20	\$ 4,006.64	\$ 4,980.80	\$ 16,026.56	\$ 11,045.76
	7			\$ 7,493.20	\$ 23,604.24	\$ 16,111.04

### Final Estimate of Incremental Costs for Completion Report (CR)

Final Project Cost Summary					
HP	Count	Per VFD	Total Cost	Documentation Included	Incremental Cost
7.5	2	\$ 1,234.06	\$ 2,468.12	See Invoice # 1920	Total cost - Baseline Cost (\$7,493.20)
20	1	\$ 1,950.20	\$ 1,950.20	See Invoice # 1920	
25	4	\$ 2,171.40	\$ 8,685.60	See Invoice # 1920	
			\$ 13,103.92		\$ 5,610.72



# End-User Self Certification

Section	Title	Key Elements
Appendix B	End-User Self Certification	End-User Self Certification of accounting system

- ❖ End-Use Self Certification
  - Certifies customer's accounting system
  - Allows cost reporting from system



# Next Steps





# Next Steps

Download draft Custom Cost Documentation Guidelines:

- <https://www.bpa.gov/energy-and-services/efficiency/custom-project-protocols>

Send any comments to:

- Todd Amundson [tmamundson@bpa.gov](mailto:tmamundson@bpa.gov)
- By 12/10/2023

Final version released end of 2023

BONNEVILLE POWER ADMINISTRATION

**Custom Project  
Cost Documentation Guide  
2024-2025**



# Questions or Comments?





# Thank you!

